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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,359	01/07/2002	Joerg Dreistein	Q67825	5450

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EXAMINER	
MARKHAM, WESLEY D	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,359	DREISTEIN ET AL.	
	Examiner	Art Unit	
	Wesley D Markham	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *18-33 and 35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 total*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1 – 17 and 34, drawn to a method for coating optical elements, in the reply filed on 4/2/2004 is acknowledged. As such, Claims 18 – 33 and 35 are withdrawn from further consideration by the examiner as being drawn to a non-elected invention. An Office Action on the merits follows.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) (i.e., the certified copy of German Application 10101014.1, filed on 1/5/2001), which papers have been placed of record in the file.

Information Disclosure Statement

3. The IDSs (2) filed on 4/25/2002 and 5/28/2002 are acknowledged, and the documents listed thereon have been considered by the examiner as indicated on the attached copies of the PTO/SB/08 forms.

Drawings

4. The formal drawings (1 sheet, 2 figures) filed by the applicant on 1/7/2002 are acknowledged.

5. The drawings are objected to because there is an arrow in Figure 2 that lacks a corresponding reference number (see Figure 2, the arrow located between reference numbers "14" and "20"). The applicant is suggested to insert the reference number "10" to describe this arrow in order to correspond to the reference numbers presented in Figure 1. Corrected drawing sheets are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office Action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

- Page 12, line 1: The reference number "18" appears to be a typographical error and should read "19" in order to correspond to Figures 1 and 2 and the previous description of the gas source "19" (see, for example, paragraph [34]).
- Page 13, paragraph [46]: The reference number "9" appears to be a typographical error and should read "10" in order to correspond to Figures 1 and 2 and the previous description of the casing opening "10" (see, for example, paragraph [32]).

Appropriate correction is required.

Claim Objections

7. Claim 6 is objected to because of the following informalities: The word "depositing" appears to be misspelled "depositioning" in line 2 of the claim. Appropriate correction is required.
8. Applicant is advised that should Claim 8 be found allowable, Claim 34 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Observations

9. Regarding Claims 1, 4, and 34, the examiner notes that the phrases associated with the terms "in particular" (Claims 1 and 34) and "such as" (Claim 4) have been reasonably interpreted to be exemplary and not limiting.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1, 5, 12, 13, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545).

13. Regarding independent **Claim 1** (from which Claims 2 – 17 depend), Libbey teaches a method for coating optical elements (e.g., glass plates) in a "working chamber of a coating device" (i.e., chamber "23"), the method comprising providing at least one lock system with at least one evacuable lock chamber (i.e., either or both of chambers "21" and "22"), positioning at least one optical element in the lock chamber, treating (e.g., heating and/or cleaning) the optical element inside the lock chamber, and transporting the optical element between the lock chamber and the working chamber under exclusion of the environmental atmosphere (Figures 1 – 9, page 1, lines 12 – 17 and 45 – 92; page 2, lines 1 – 105; page 3, lines 16 – 130; and page 4, lines 1 – 51 and 80 – 90). Libbey does not explicitly teach equalizing the atmospheres of the working chamber and the lock chamber(s). However, it is clear from the discussion in Libbey (see pages 1 – 4) that each of the various chambers is evacuated to a desired degree during the process. Arnold et al. teaches a method and apparatus for coating substrates such as glass sheets by transporting the substrates from an entrance lock chamber through a coating chamber and out an exit lock chamber (i.e., a process analogous to that of Libbey's) and teaches that the pressures (i.e., the "atmospheres") of the chambers should be equalized, even during passage of the substrates through the locks, in order to prevent "crosstalk" (i.e., the undesirable flow of gases) between the chambers and insure that the process remains stable and constant (Abstract, Figure 1, Col.1, lines 5 – 38 and 59 – 64; Col.2, lines 5 – 11 and 24 – 50; and Col.3, lines 1 – 31). Therefore, it would have been obvious to one of ordinary skill in the art to equalize the pressures /

atmospheres of the working chamber and the lock chamber(s) of Libbey, as taught by Arnold et al., with the reasonable expectation of successfully and advantageously preventing crosstalk between the chambers and insuring that the process remains stable and constant, even during the passage of the substrates through the locks. Regarding **Claim 5**, Libbey also teaches that the treating step comprises pre-cleansing of at least one surface of an optical element that is to be coated before the coating takes place (page 1, lines 90 – 92; page 2, lines 90 – 118; page 3, lines 66 – 111). Regarding **Claims 12 and 16**, the combination of Libbey and Arnold et al. also teaches controlling the temperature of the optical element in the lock chamber(s) by radiating heat radiation onto the optical element (page 2, lines 78 – 93; page 3, lines 80 – 89). Regarding **Claim 13**, the combination of Libbey and Arnold et al. does not explicitly teach changing the temperature of the optical element with a controlled rate of temperature change and/or maintaining the temperature of the optical element at a predetermined temperature. However, Libbey does teach heating the article (i.e., changing the temperature of the optical element) to a required temperature (page 2, lines 78 – 93), for example 500° F (page 3, lines 80 – 84), in the lock chamber(s) without explicitly teaching that such heating is done at a "controlled rate". It would have been obvious to one of ordinary skill in the art to perform the heating process of Libbey at a "controlled rate" (i.e., as opposed to an uncontrolled rate) because one of ordinary skill in the art would have reasonably expected such a controlled heating process to be superior to an uncontrolled heating process in achieving the objective of Libbey (i.e., heating the article to a specific, desired temperature).

Regarding **Claim 17**, the combination of Libbey and Arnold et al. teaches that a plurality of optical articles is coated in one process, the process being divided into several processing intervals, wherein during one processing interval at least one optical element is arranged inside a closed working chamber for coating and at least one other optical element is arranged in a lock chamber assigned to the working chamber, wherein treating of the optical element inside the lock chamber is performed during other processing interval (see Figures 1 – 6 and the corresponding description on pages 2 – 4 of Libbey, which show the sequential movement of plural optical elements "A" through "E" through the various lock, coating, and exit chambers).

14. Claims 2 – 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A).

15. The combination of Libbey et al. and Arnold et al. teaches all the limitations of **Claims 2 – 5 and 13** as set forth above in paragraph 13, except for a method wherein the cleaning of the optical element in the lock chamber comprises irradiation of the optical element with UV light (Claim 2), wherein an evacuation of the lock chamber is performed during the cleaning (Claim 3), and wherein before and/or during the UV cleaning, the atmosphere in the lock chamber is enriched with a processing gas such as oxygen (Claim 4). Specifically, the pre-cleaning step taught by Libbey et al. (i.e., the cleaning step that takes place before the coating) is an

oxygen plasma glow discharge cleaning process (page 1, lines 90 – 92; page 2, lines 90 – 118; page 3, lines 66 – 111). Nissin Electric teaches that it was known in the art at the time of the applicant's invention to pre-clean a glass substrate (i.e., prior to transporting the substrate into a coating chamber to be coated) in a chamber by blowing oxygen gas onto the substrate surface under vacuum while irradiating the surface with UV rays (Abstract and Figure). Additionally, NEC teaches that irradiating a substrate surface with UV rays while heating the substrate and passing gaseous oxygen containing ozone over the substrate surface (while the substrate is in a loading chamber that is being evacuated) oxidizes, decomposes, and removes contaminants from the surface, thereby improving the cleaning effect and cleaning the surface in a short time (Abstract and Figure). Therefore, it would have been obvious to one of ordinary skill in the art to pre-clean the optical element of the combination of Libbey and Arnold et al. by irradiating the optical element with UV light while passing oxygen gas / ozone gas over the optical element in the lock chamber (i.e., enriching the atmosphere in the lock chamber with a processing gas such as oxygen) and heating the optical element in a controlled manner while evacuating the lock chamber during the cleaning process (as taught by Nissin Electric and NEC) as opposed to plasma pre-cleaning the optical element (as taught by Libbey) with the reasonable expectation of (1) success, as Nissin Electric teaches that a UV cleaning process can be utilized to pre-clean a glass substrate (i.e., a substrate such as that taught by Libbey), and (2) obtaining the benefits of using the

UV pre-cleaning process, such as improving the cleaning effect and cleaning the surface in a short time.

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A), and in further view of Hyodo et al. (USPN 6,355,353 B1).

17. The combination of Libbey et al., Arnold et al., Nissin Electric, and NEC teaches all the limitations of **Claim 7** as set forth above in paragraph 15, except for a method wherein the treating step comprises post-cleaning the finished, coated optical elements in the lock chamber. Specifically, the combination of Libbey et al., Arnold et al., Nissin Electric, and NEC is silent regarding any post-cleaning step. However, Hyodo et al. teaches that, in the art of coating glass substrates by CVD / pyrolysis (i.e., a process analogous to that of Libbey's), the coated glass is cleaned after the film deposition (Col.1, lines 5 – 17, and Col.5, lines 48 – 50). Therefore, it would have been obvious to one of ordinary skill in the art to repeat the lock chamber UV cleaning process taught by the combination of Libbey et al., Arnold et al., Nissin Electric, and NEC (see paragraph 15 above) after depositing the coating(s) desired by Libbey with the reasonable expectation of successfully and advantageously producing a coated glass substrate having the highest possible quality (i.e., due to the additional post-cleaning step).

18. Claims 8 – 11 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498).

19. The combination of Libbey et al. and Arnold et al. teaches all the limitations of **Claims 8 – 11 and 34** as set forth above in paragraph 13, except for a method wherein the treating step comprises measuring at least one optical property of the optical element inside the lock chamber (Claims 8 and 34), wherein the optical property is the transmittance, reflectivity, and/or absorption factor of the optical element (Claim 9), wherein the measuring step is performed in a lock chamber atmosphere different from the environmental atmosphere (Claim 10), for example in a vacuum (Claim 11). However, the goal of Libbey et al. is to produce coated optical articles (e.g., glass substrates) such as mirrors, interference filters, light and heat filters, low reflection coatings, and graded coatings (page 4, lines 80 – 85). Suzuki et al. teaches that, in the art of producing anti-reflection coatings on a substrate (i.e., a process analogous to that of Libbey's), high accuracy thickness control is required and can be achieved by measuring an optical characteristic such as the reflection of the coated substrate after the coating process is completed and the substrate is carried through the load-lock chamber (Abstract, Figure 1, Col.1, lines 8 – 64, Col.3, lines 20 – 32 and 66 – 67, Col.4, lines 1 – 14, Col.6, lines 45 – 67, and Col.7, lines 11 – 52). Sato et al. teaches that a wide variety of inspection units for evaluating, for example, deposited film thickness can be provided within chamber(s) associated

with a film formation chamber. In the process of Sato et al., the substrate having the film deposited thereon is transferred from the coating chamber to another chamber where the inspection occurs (Abstract, Col.3, lines 35 – 56, Col.4, lines 1 – 43, Col.5, lines 1 – 25, and Col.8, lines 50 – 57). The entire process / apparatus can be carried out in a vacuum atmosphere without exposure of the substrate to an exterior gas such as air (Col.5, lines 23 – 25). Nashimoto teaches that, in the art of measuring a property of a substrate in a coating process, the measuring device is located within the load-lock chamber rather than anywhere outside the chamber because higher accuracy can be provided when the measurement is taken in a vacuum within the chamber as opposed to in the atmosphere outside the chamber (Col.1, lines 54 – 59, Col.3, lines 39 – 55). Therefore, it would have been obvious to one of ordinary skill in the art to measure an optical property such as the reflectance of the optical element in the lock chamber of Libbey after the coating process is finished while the lock chamber is under vacuum (i.e., in a lock chamber atmosphere different from the environmental atmosphere) with the reasonable expectation of successfully and advantageously providing high accuracy thickness control (as taught by Suzuki et al. to be required when forming anti-reflective coatings) due to the optical property / reflectance measurement process in general and especially the fact that the measurement is performed within the vacuum of the lock chamber (as opposed to the external atmosphere), as taught by Nashimoto.

20. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Lewis et al. (USPN 4,560,576).

21. The combination of Libbey, Arnold et al., Suzuki et al., Sato, and Nashimoto teaches all the limitations of **Claim 6** as set forth above in paragraph 19, except for a method wherein the step of coating the optical elements includes depositing multiple coatings using at least two coating steps, wherein at least one treatment step performed inside the lock chamber is performed between two subsequent coating steps performed in the working chamber. However, as set forth above in paragraph 19, the aforementioned combination of references does teach measuring the reflectivity and thus the thickness of the deposited film in the lock chamber in general. Lewis et al. teaches that, in the course of depositing a film, the deposition process can be interrupted at any time to allow the surface to be optically monitored, thereby insuring precise control of the coating (Col.3, lines 47 – 53). Therefore, it would have been obvious to one of ordinary skill in the art to stop the coating process of the combination of Libbey, Arnold et al., Suzuki et al., Sato, and Nashimoto at any time desired by the purveyor in the art in order to measure the optical properties of the partially deposited coating in the lock chamber (see paragraph 19 above) with the reasonable expectation of successfully and advantageously insuring precise control of the coating process. Please note that the examiner has reasonably interpreted the first portion of the coating process of the

combination of Libbey, Arnold et al., Suzuki et al., Sato, Nashimoto, and Lewis et al. to form a first coating; the optical property measurement step to be the treatment step performed inside the lock chamber between two coating steps; and the second portion of the coating process (i.e., the portion of the process used to complete the film after the optical property measurement step) to be the subsequent coating step performed in the working chamber, as required by Claim 6.

22. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Tsuji et al. (JP 03-179730 A).

23. The combination of Libbey et al. and Arnold et al. teaches all the limitations of **Claims 14 and 15** as set forth above in paragraph 13, except for a method wherein the step of controlling the temperature of the optical element includes introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber, whereby the temperature of the optical element is controlled / increased above the temperature of the environment at least partially by contacting the optical element with the hot gas (e.g., "by action of the gas introduced into the lock chamber"). However, Libbey does teach controlling the temperature of the optical element in the lock chamber(s) by radiating heat radiation onto the optical element in order to heat the element to a suitable temperature of, for example, 500° F (page 2, lines 78 – 93; page 3, lines 80 – 89). Additionally, Libbey teaches that the heating is more efficiently performed if convection heating is used in addition to

radiation heating (page 2, lines 85 – 88). Tsuji et al. teaches that it was known in the art at the time of the applicant's invention to pre-heat a substrate in a load lock chamber by introducing a hot gas (e.g., N_2 or Ar) into the lock chamber and by contacting the substrate with the hot gas (e.g., "by action of the gas introduced into the lock chamber") (Abstract and Figure 1(c)). Therefore, it would have been obvious to one of ordinary skill in the art to control the temperature of the optical element of Libbey by introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber (as taught by Tsuji et al.), whereby the temperature of the optical element is controlled / increased above the temperature of the environment (e.g., to a temperature of 500° F, for example) at least partially by contacting the optical element with the hot gas with the reasonable expectation of successfully and advantageously performing the heating process more quickly and efficiently than when using radiation heating alone (i.e., due to the additional convection heating provided by the hot gas).

24. Claims 1, 5, 8 – 11 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (USPN 4,560,576) in view of Arnold et al. (USPN 4,824,545).

25. Regarding independent **Claim 1** (from which Claims 2 – 17 depend), Lewis et al. teaches a method for coating optical elements (e.g., components such as lenses, windows, reflectors, etc.) in a "working chamber of a coating device" (i.e., growth chamber "3"), the method comprising providing at least one lock system with at least

one evacuable lock chamber (i.e., either or both of chambers "1" and "2"), positioning at least one optical element in the lock chamber, treating (e.g., cleaning and/or measuring) the optical element inside the lock chamber, and transporting the optical element between the lock chamber and the working chamber under exclusion of the environmental atmosphere (Figure, Abstract, Col.1, Col.2, lines 1 – 62, Col.3, lines 1 – 33, and Col.4, lines 15 – 30). Lewis et al. does not explicitly teach equalizing the atmospheres of the working chamber and the lock chamber(s). However, it is clear from the discussion in Lewis et al. (see Cols.1 – 4) that each of the various chambers is evacuated to a desired degree during the process. Arnold et al. teaches a method and apparatus for coating substrates such as glass sheets by transporting the substrates from an entrance lock chamber through a coating chamber and out an exit lock chamber (i.e., a process analogous to that of Lewis et al.'s) and teaches that the pressures (i.e., the "atmospheres") of the chambers should be equalized, even during passage of the substrates through the locks, in order to prevent "crosstalk" (i.e., the undesirable flow of gases) between the chambers and insure that the process remains stable and constant (Abstract, Figure 1, Col.1, lines 5 – 38 and 59 – 64; Col.2, lines 5 – 11 and 24 – 50; and Col.3, lines 1 – 31). Therefore, it would have been obvious to one of ordinary skill in the art to equalize the pressures / atmospheres of the working chamber and the lock chamber(s) of Lewis et al., as taught by Arnold et al., with the reasonable expectation of successfully and advantageously preventing crosstalk between the chambers and insuring that the process remains stable and constant, even during

the passage of the substrates through the locks (i.e., the gate valves) of Lewis et al. Regarding **Claim 5**, Lewis et al. also teaches that the treating step comprises pre-cleansing of at least one surface of an optical element that is to be coated before the coating takes place (Col.3, lines 10 – 29). Regarding **Claims 8 – 11 and 34**, Lewis et al. also teaches a method wherein the treating step comprises measuring at least one optical property of the optical element inside the lock chamber (Claims 8 and 34), wherein the optical property is the transmittance, reflectivity, and/or absorption factor of the optical element (Claim 9), wherein the measuring step is performed in a lock chamber atmosphere different from the environmental atmosphere (Claim 10), for example in a vacuum (Claim 11) (Col.3, lines 17 – 26).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cawthon (USPN 3,568,632) teaches a method of coating optical lenses in which the lenses are (1) pre-heated in an evacuable lock chamber, (2) transported into a coating chamber and coated, and (3) transported into a cooling chamber and cooled. The chambers are all maintained under vacuum. NEC Corp (JP 04-45277 A) teaches a loading chamber for a film forming apparatus which contains a heater, an ozone emitter, and a UV irradiating device in order to pre-clean the surface of a substrate (e.g., a liquid crystal substrate) in the loading chamber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571)

272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesley D Markham
Examiner
Art Unit 1762

WDM

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SUPERVISORY PATENT EXAMINER
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